

America's Most Unwanted



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- Can you recognize insect damage?
- Can you recognize key pests?
- Do you know who are the critical invaders?

Insect Damage ?

No
Fungicide
(Daconil)
damage



Rose

Insect Damage ?



No – Rat damage

Insect Damage ?



No – Herbicide damage

Insect Damage ?



No – Cold damage





Citrus spider – *Cyrtophora citricola*

Pest ?

YES

NO





Same insect ? YES

Scale – females and males



Same insect ?

YES





Pest ?



YES

NO

Selected Pest Introductions

- Oriental fruit fly (2015)
- Taro planthopper (2015)
- Old World bollworm (2015)
- *Fiorinia proboscidea* (2014)
- Potato psyllid (2014) (interceptions)
- *Lepidosaphes chinensis* (2014)
- *Delottococcus confuses* (2013)
- Rose rosette disease (2013)
- Honeysuckle whitefly (2012)
- Bondar's nesting whitefly (2011)
- Giant African land snail (2011)
- Brown Marmorated Stink Bug (2011)
- Passion vine mealybug (2011)
- European pepper moth (2010)
- Ash whitefly (2010)
- Rugose spiraling whitefly (2009)
- Croton scale (2008)
- Ficus whitefly (2007)
- Red palm mite (2007)
- Redbay ambrosia beetle (2005)
- Chilli thrips (2005)
- Pink hibiscus mealybug (2002)
- Ficus thrips (2003)
- Bamboo mealybug (2002)
- Sri Lanka weevil (2000)
- Lobate lac scale (1999)
- Cycad Aulacaspis scale (1996)

Hemiptera

“sucking-piercing insects”

- True bugs
 - stink bugs, jadera bugs, lace bugs, etc
- “Hoppers”
 - cicadas, spittlebugs, leaf, tree & planthoppers, sharpshooters
- Psyllids, whiteflies, aphids, scales, mealybugs



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Whiteflies in Florida



- ▶ Approximately 65 species in Florida
- ▶ Common pests of many crops and ornamental plants
- ▶ Narrow and wide host range depending on the species

Important Whiteflies

- Greenhouse whitefly (*Trialeurodes vaporariorum*)
- Silverleaf (sweetpotato) whitefly (*Bemesia tabaci*)
(= B biotype) (aka *B. argentifolii*)
 - Q biotype (2005)
- Citrus whitefly (*Dialeurodes citri*)
- Cloudy-winged whitefly (*Singhiella citrifloii*)
- Citrus blackfly (*Aleurocanthus woglumi*)
- Giant whitefly (*Aleurodicus dugesii*)





Whitefly Update

**Ficus
Whitefly**



**Rugose
Spiraling Whitefly**



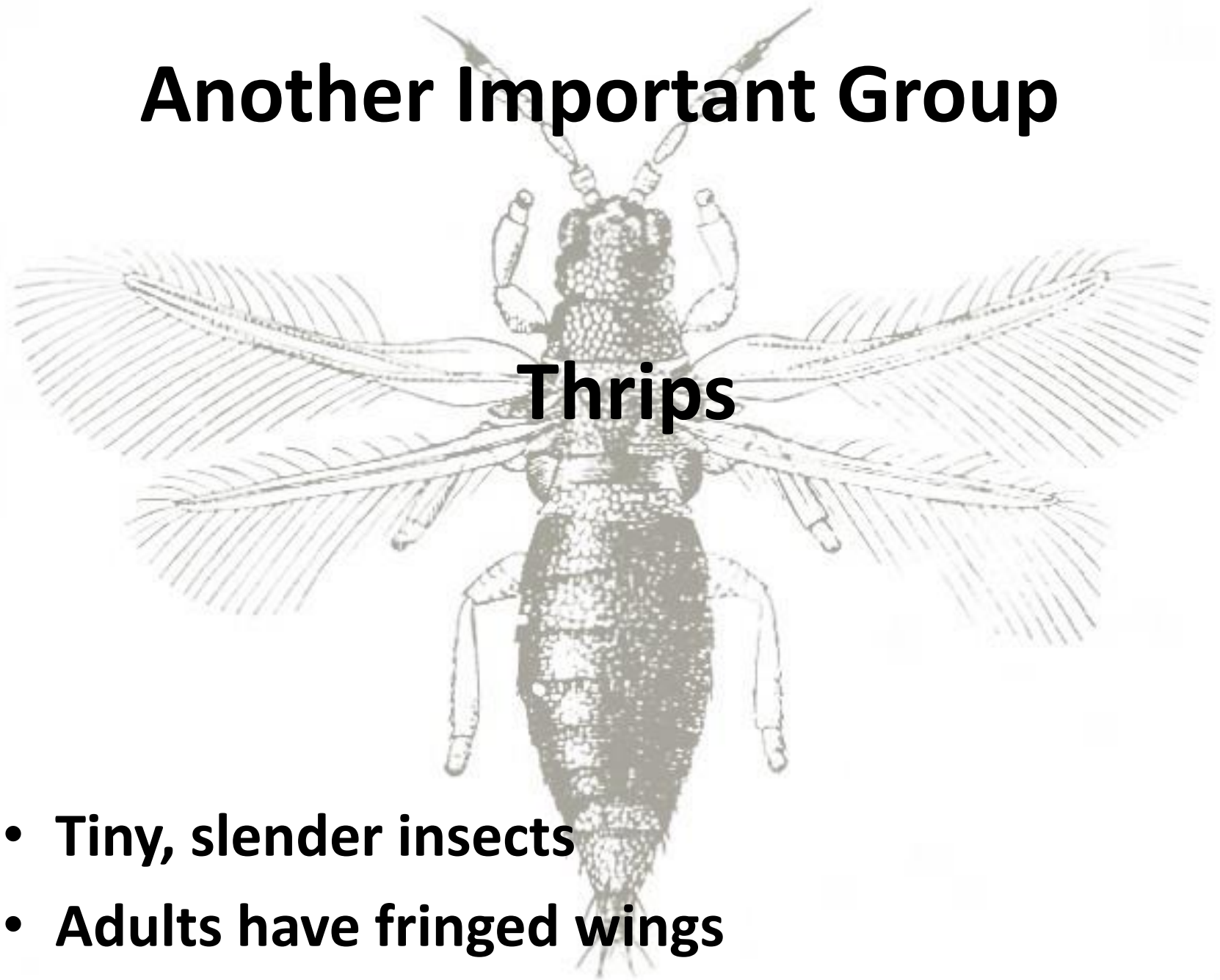
**Bondar's
Nesting Whitefly**



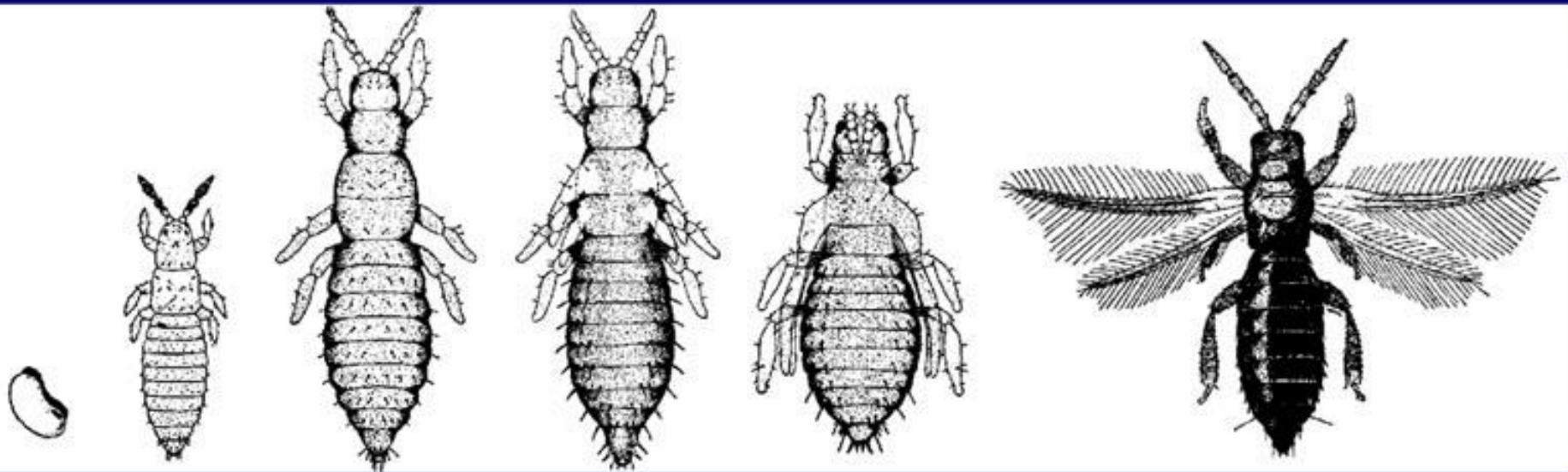
Another Important Group

Thrips

- Tiny, slender insects
- Adults have fringed wings



Typical Thrips Life Cycle



egg

nymph I

"larva" 1

nymph II

"larva" 2

nymph III

"prepupa"

nymph IV

"pupa"

adult

Eggs laid
on/in leaves,
buds or
other plant
parts

Prepupa and pupal
stages often drop
from the plants and
are found in the soil

Life cycle is usually 3 weeks
depending on type of thrips
and environmental
conditions

Thrips Damage

Thrips feeding results in various responses including:

- Stippling (tiny pale spots)
- Scars; scabbing
- Discoloration; streaks; spots
- Petals may exhibit “color break”
- Leaf drop
- Leaf rolling
- Stunting
- Gallling

With many species, by the time damage is observed, the thrips may no longer be present





Common Thrips in South Florida

Attacking Ornamental Plants

- Weeping fig thrips, *Gynaikothrips uzeli*
- Cuban laurel thrips, *Gynaikothrips ficorum*
- Tabebuia thrips, *Holopothrips tabebuia*
- Florida flower thrips, *Frankliniella bispinosa*
- Western flower thrips, *Frankliniella occidentalis*
- Common blossom thrips, *Frankliniella schultzei*
- Melon or palm thrips, *Thrips palmi*
- Onion thrips, *Thrips tabaci*
- Chili thrips, *Scirtothrips dorsalis*
- Avocado thrips, *Scirtothrips perseae*
- *Echinothrips americanus*
- Greenhouse thrips, *Heliothrips haemorrhoidalis*
- Redbanded thrips, *Selenothrips rubrocinctus*

Chili Thrips



Non-Insect Pests

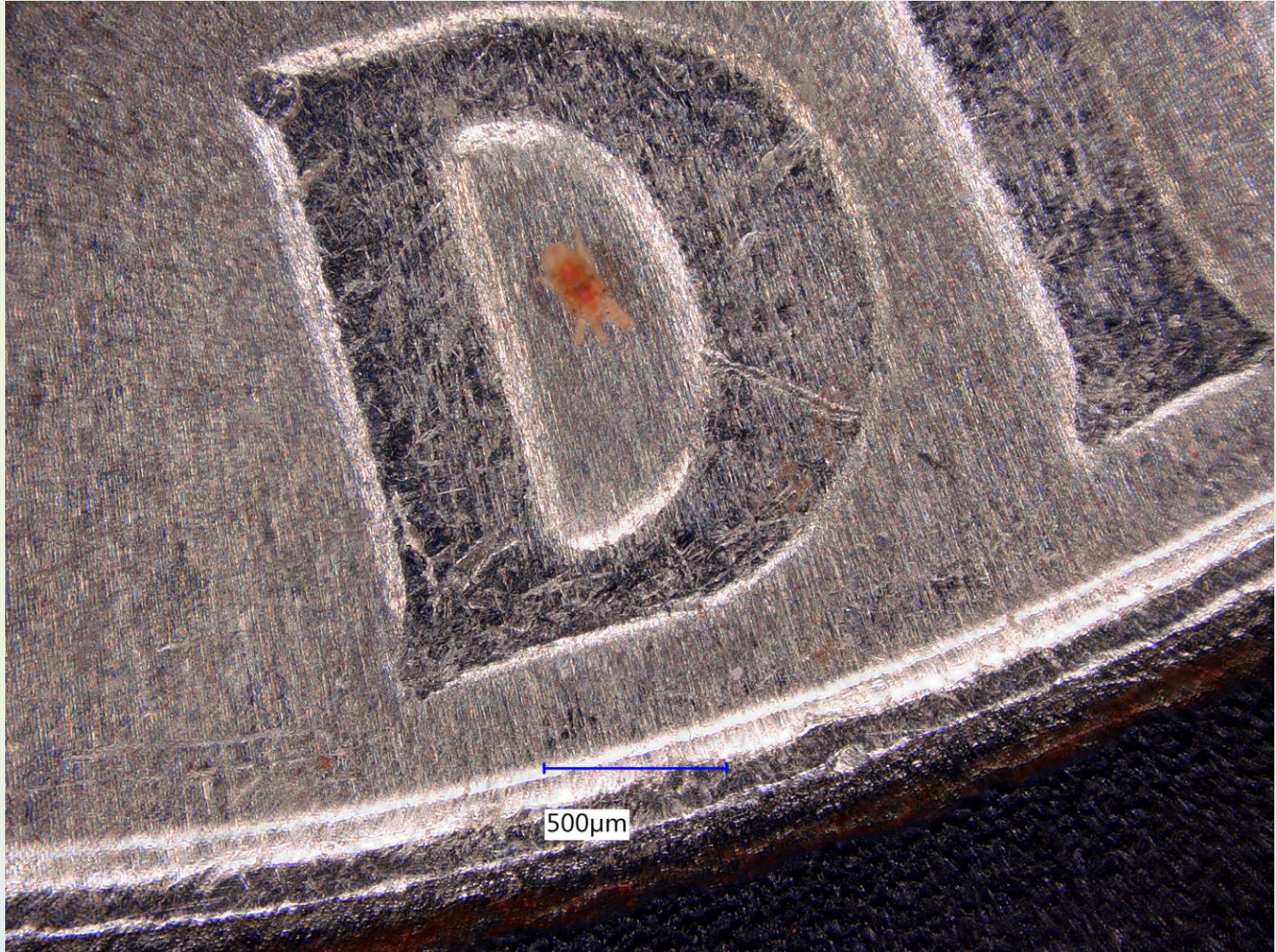
Mites, Snails, Millipedes



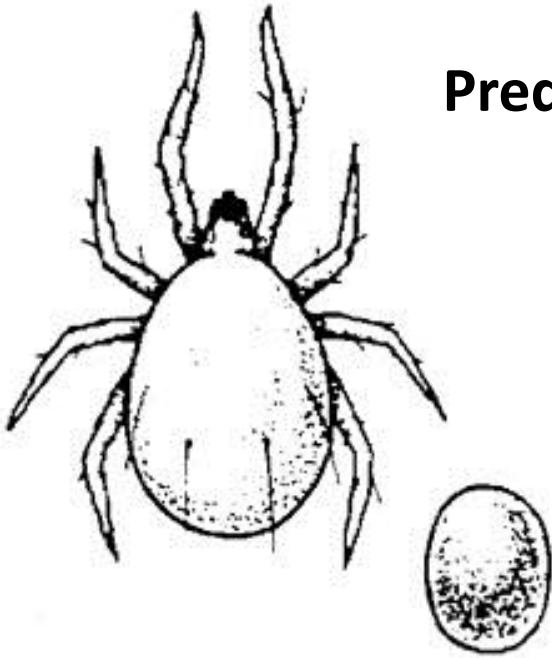
Mites on Ornamental Plants

- Spider mites (Tetranychidae)
 - The most common mites
 - Two spotted spider mite; Glover mite, Lewis mite, Southern red mite, six-spotted mite, spruce spider mite
 - Privet mite
- False spider or Flat mites (Tenuipalpidae)
 - Red palm mite
- Tarsonemid mites (Tarsonemidae)
 - Broad
 - Cyclamen
- Gall or Eriophyid mites (Eriophyidae)
 - Have a different body shape with only two pairs of legs

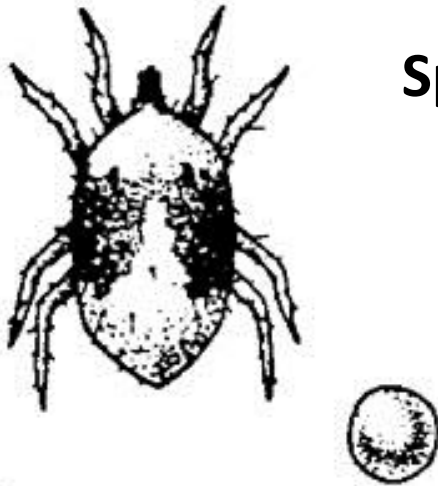
Mite Size



Predatory Mite



Spider Mite



Spider Mites

They all do not look the same



Spider mite damage on hibiscus



Red spider mites on hibiscus





Two spotted spider mite on marigold



Spider mite damage



Spider mite damage on croton

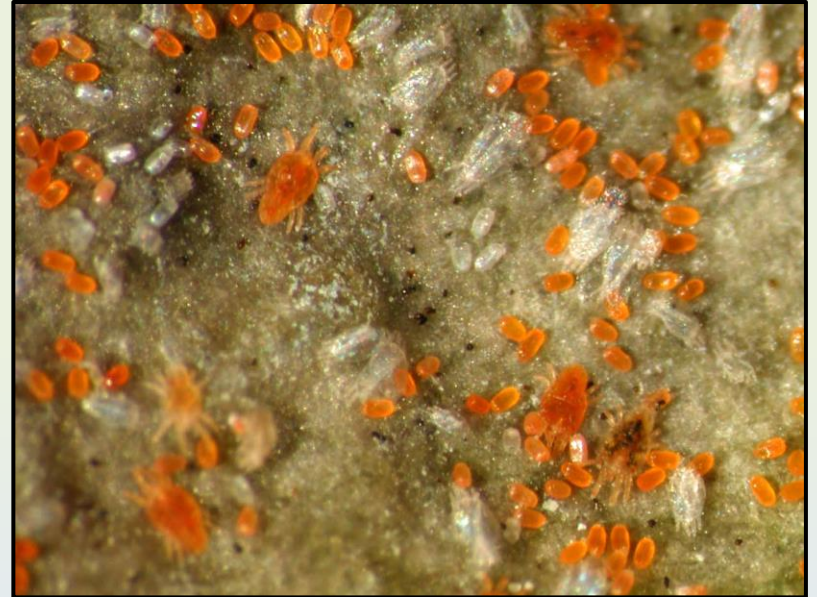
Flat Mites



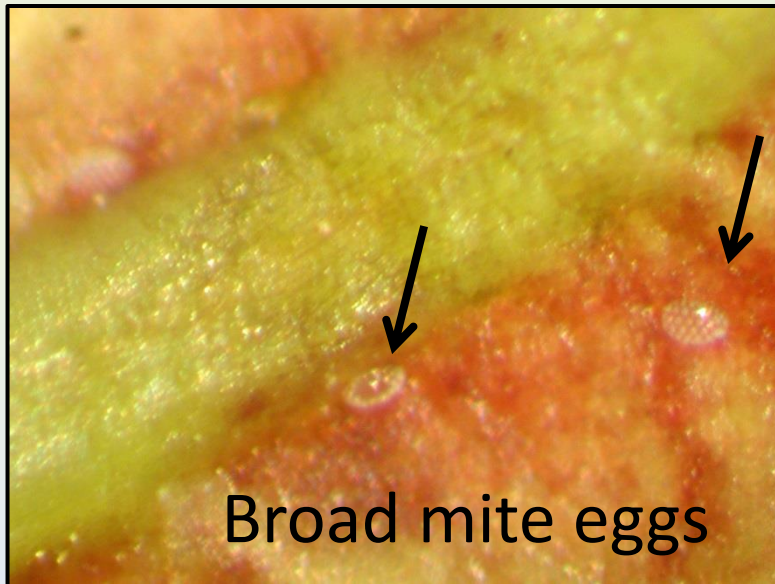
Brevipalpus spp.



Phalaenopsis mite (*Tenuipalpus pacificus*) on orchid



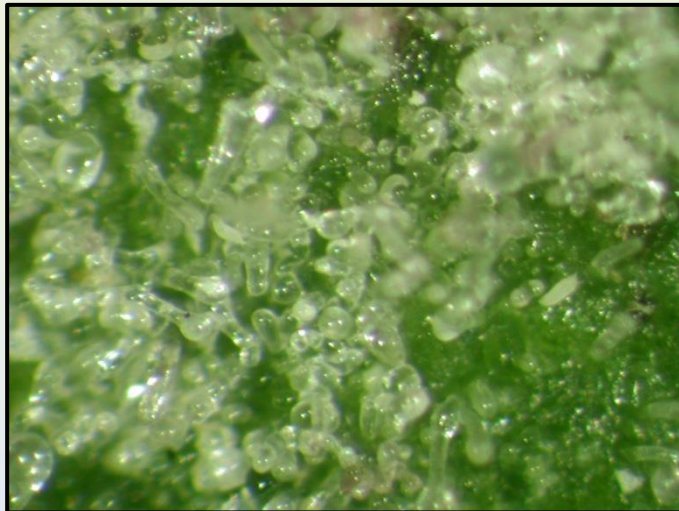
Broad mite damage



Eriophyid (Rust) Mites



Eriophyid mite on Ruelia

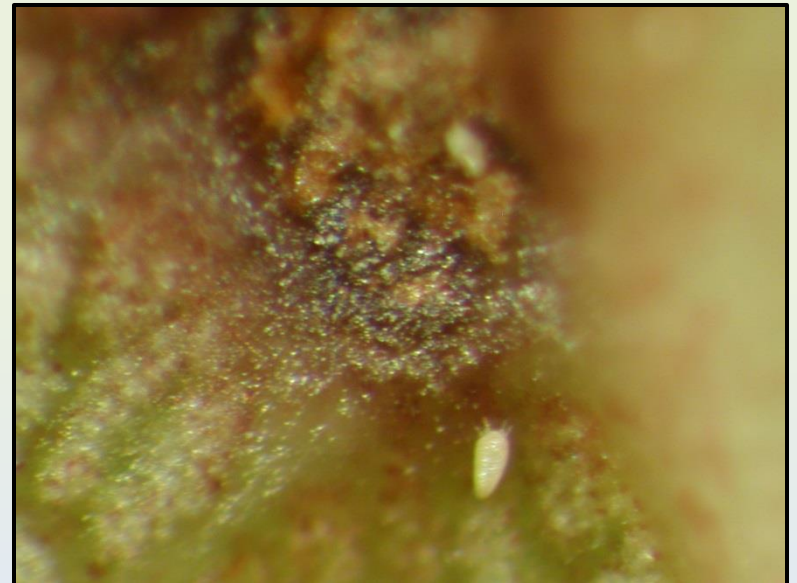




Eriophyid mite on oak



Eriophyid mite on plumeria





Eriophyid mite on Salix



Slugs and Snails

- Occur in both aquatic and terrestrial environments
- In Florida there are numerous native and introduced species
- Most land snails are not pests
 - Feed on algae and fungi; few are predatory
- Snail ID is important before management



Tree Snails

- Live most or all of their lives in trees
- They are frequently large in size
- Are not pests
- Some are considered endangered



Plant Feeding Snails

Cuban brown snail or garden snail,
Zachrysia provisoria



Asian tramp snail, *Bradybaena similaris*



Plant Feeding Snails

Southern flatcoil, *Polygyra cereolus*



Apple snails,
Pomacea spp. and *Marisa cornuarietis*



White-lipped globe, *Mesodon thyroidus*



Jumping snail, *Ovachlamys fulgens*





Photo: A. Derksen, FL Cooperative Agriculture Pest Survey Program

Giant African Land Snail

Flatworms (Land Planarians)

- Several species commonly found in landscapes
- Worm or “slug” like
- Some have heads that are expanded
- Usually greenish-gray to brown with stripes on their back
- Found in dark, cool, moist areas under objects such as rocks, logs, debris
- Can be seen on soil surfaces during heavy rains
- Feed on earthworms, slugs, insect larvae and also cannibalistic



New Guinea Flatworm

- Invasive species
- Been in Florida for at least 3 years (maybe longer)
- Threat to snail biodiversity because it preys on and kills snails



Millipedes and Centipedes

- Commonly see in yards and sometimes get into houses and other structures
- They are generally considered a nuisance

Centipede



Millipede



Problems with New Millipedes

